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[Claim(s)]

[Claim 1] Cover a cylindrical radiation source, it is equipped and the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry by making one on the outline circle of said radiation source into the starting point. And it sets to the reflector plate of the form which the straight line which connects a both-sides end **** in said outline circle. The involute form reflector plate which makes said involute curve the form which carried out specified quantity deletion of the neighborhood of the starting point, and is characterized by making it approach until it contacts said radiation source to this reflector plate also with many in the direction for which the main axis and said starting point of a radiation source are connected.

[Claim 2] The involute form reflector plate according to claim 1 by which it is being [the specified quantity concerning deletion near / said / the starting point / at most 20% of the diameter of a radiation source] characterized.

[Claim 3] Cover a cylindrical radiation source, it is equipped and the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry by making one on the outline circle of said radiation source into the starting point. And the involute form reflector plate characterized by the straight line which connects a both-sides end connecting two or more involute form reflector plates of the form which carried out specified quantity deletion of the neighborhood of a side edge of said involute curve in the reflector plate of the form which **** in said outline circle.

[Claim 4] Cover a cylindrical radiation source, it is equipped and the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder is prolonged in the shape of [concerned / circular] an involute curve in both-sides

symmetry by making one on the outline circle of said radiation source into the starting point. And the straight line which connects a both-sides end is the reflector plate of the form which **** in said outline circle, and the neighborhood of a both-sides end of said involute curve is set to the involute form reflector plate or the involute form reflector plate according to claim 3 of the form which carried out specified quantity deletion. The involute form reflector plate characterized by establishing the plane of reflection of a field perpendicular to the direction of a straight line which connects said both-sides end to the outermost edge equivalent to the eliminated part concerned of the involute form reflector plate which constitutes the outermost edge.

[Claim 5] The involute form reflector plate according to claim 3 or 4 characterized by being the quantity from which the distance with which the specified quantity concerning deletion near [said] the both-sides end connects the both-sides end after [concerned] carrying out specified quantity deletion for the neighborhood of a both-sides end turns into at least 80% which connects the both-sides end before this deletion of distance.

[Claim 6] Cover a cylindrical radiation source, it is equipped and the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry by making one on the outline circle of said radiation source into the starting point. And the involute form reflector plate characterized by carrying out specified quantity expansion in the reflector plate of the form which the straight line which connects a both-sides end **** in said outline circle from the circular diameter which requires the diameter of a radiation source for said involute curve.

[Claim 7] The involute form reflector plate according to claim 6 by which the specified quantity concerning expansion of said diameter is being [it / at most 20% of an outline diameter of circle] characterized.

[Claim 8] The involute form reflector plate characterized by connecting two or more involute form reflector plates concerning Claim 1 with which said cylindrical radiation source was equipped, or 6.

[Claim 9] The Claims 1, 3 and 6 or the involute form reflector plate of any one description of eight characterized by having the form to which a main axis covers the cylindrical radiation source connected annularly, and leads to a line.

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the involute form reflector plate which reflects

efficiently the radiation from cylindrical radiation sources, such as light emitted from cylinder sides, such as a source of luminescence, for example, a fluorescence tube etc., and infrared radiation emitted from a cylindrical shape red heat machine.

[0002]

[Description of the Prior Art] Although reflector plates which exist from the former, such as a reflector plate for Lighting Sub-Division and an emanated type stove, are the cylindrical shape reflector plate with which the section of this plane of reflection forms an approximate circle, and a paraboloid-like reflector plate with which this plane of reflection forms an abbreviation paraboloid, these are the reflector plates of what is called image formation type to which an image can be connected to a point source or a point source. Here, the reflector plate of said image formation type is effective when a light source or a radiation source is a point or a line. However, many of actual light sources or radiation sources are the cylindrical shapes of a limited diameter, and when said cylindrical shape reflector plate and a paraboloid-like reflector plate are used, the parts of the light (airlight) ejected from the radiological agent in all the directions will be interrupted by this radiological agent after reflecting with this cylindrical shape reflector plate or a paraboloid-like reflector plate. Therefore, also in intensity and directionally distribution of the light in the opening which leaves the light or radiation ejected from the radiological agent, or a radiation-of-heat line becomes uneven, and comprehensive reflection efficiency also worsens further.

[0003] Then, these people are completely emitted homogeneously from an opening, without completely interrupting the radiation ejected from this radiation source. [an involute form reflector plate with which efficiency also improves sharply and homogeneous radiation is obtained] That is, it applied for the involute form reflector plate of cylindrical or the form which the straight line which is prolonged in the shape of an involute curve in both-sides symmetry by making one on the outline circle of radiation sources, such as sphaeroidal, into the starting point, and connects a both-sides end **** in said outline circle previously (Tokuganhei2-41706).

[0004] And when the radiation intensity in the cylindrical shape radiological agent surface was equal to all directions, it made it possible to obtain completely homogeneous radiation intensity and isotropic radiation by a reflector plate opening in the plane of reflection (100% of reflectivity) where a plane of reflection is ideal.

[0005]

[Problem to be solved by the invention] however, if it is in an actual radiological agent, when light or infrared radiation is not emitted equally to the direction of the perimeter, but it has it from the surface and the conventional involute form reflector plate is used A dark portion is made into the portion of the center of an involute form reflector plate (the starting point of the involute form reflector plate prolonged in the shape of [concerned / circular] an involute curve

in both-sides symmetry in the reflector plate section which intersects perpendicularly with the main axis of a cylindrical radiation source by making one on the outline circle of said radiation source into the starting point near [i.e., / said]). It appears in the shape of ****, and a completely homogeneous radial plane is not attained in a reflector plate opening.
[0006] On the other hand, since the tip portion of the portion of the starting point concerned serves as a cusp (a tip is the point of thickness zero at the degree nullity of theoretical superior angle), it becomes what has manufacture cost difficult processing manufacture of the reflector plate at the time of actually manufacturing a reflector plate with processing of plate metal, extrusion fabrication, etc. and high. Moreover, since it will become weak in intensity if it is a cusp, it will become difficult to obtain the intensity of the reflector plate after manufacturing.
[0007] Moreover, when the reflectivity of a reflector plate is 100%, the involute form reflector plate can make a homogeneous radial plane to a reflector plate opening. However, since a portion with slightly small radiation intensity exists in an opening both-sides end if it is in a real plane of reflection like a metal plating side, if it is in a real reflector plate, it becomes difficult to make a homogeneous radial plane [near the opening both-sides end]. Moreover, the angle which this involute form reflector plate in this reflector plate opening both-sides end makes becomes 90 degrees to the straight line which connects a both-sides end. When putting many involute form reflector plates in order in parallel and making a reflector plate group, the amount of [of this opening both-sides end] bonding link also becomes the above-mentioned cusp, and it has difficulties, such as processing manufacture of a reflector plate. [as well as the above-mentioned]
[0008] In the involute form reflector plate with which it is equipped so that the radiation source which this invention was not made in view of such the conventional actual condition, and does not emit light or infrared radiation equally to the direction of the perimeter from the surface may be covered By adding improvement to the portion near the starting point of an involute form reflector plate, and the portion near the opening both-sides end, the light emitted from said radiation source and radiation are emitted efficiently, and it aims at offering the uniform involute form reflector plate which can obtain the radial plane of we nature by an opening.
[0009]
[Means for solving problem] For this reason, this invention covers a cylindrical radiation source, it is equipped with it, and the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry by making one on the outline circle of said radiation source into the starting point. And in the reflector plate of the form which the straight line which connects a both-sides end **** in said outline circle, said involute curve was made into the form which carried out specified quantity deletion of the neighborhood of the starting point, and it had composition made to approach until it contacts

said radiation source also to many at this reflector plate in the direction which connects said starting point to the main axis of a radiation source.

[0010] In addition, the specified quantity concerning deletion near [said] the starting point is good also as at most 20% of the diameter of a radiation source. Moreover, in invention concerning Claim 3, cover a cylindrical radiation source, and it is equipped. In the reflector plate of the form which the straight line which the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder makes the starting point one on the outline circle of said radiation source, and is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry, and connects a both-sides end **** in said outline circle It had composition which connects two or more involute form reflector plates of the form which carried out specified quantity deletion of the neighborhood of a side edge of said involute curve.

[0011] Moreover, in invention concerning Claim 4, cover a cylindrical radiation source, and it is equipped. The reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry by making one on the outline circle of said radiation source into the starting point. And the straight line which connects a both-sides end is the reflector plate of the form which **** in said outline circle, and the neighborhood of a both-sides end of said involute curve is set to the involute form reflector plate or the involute form reflector plate according to claim 3 of the form which carried out specified quantity deletion. It had composition which establishes the plane of reflection of a field perpendicular to the direction of a straight line which connects said both-sides end to the outermost edge equivalent to the eliminated part concerned of the involute form reflector plate which constitutes the outermost edge.

[0012] In addition, it is good also as a quantity from which the distance with which the specified quantity concerning deletion near [said] the both-sides end connects the both-sides end after [concerned] carrying out specified quantity deletion for the neighborhood of a both-sides end turns into at least 80% which connects the both-sides end before this deletion of distance. Moreover, in invention concerning Claim 6, cover a cylindrical radiation source, and it is equipped. In the reflector plate of the form which the straight line which the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder makes the starting point one on the outline circle of said radiation source, and is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry, and connects a both-sides end **** in said outline circle The diameter of the radiation source had composition which carries out specified quantity expansion from the circular diameter concerning said involute curve.

[0013] In addition, the specified quantity concerning expansion of said diameter is good also as

a quantity which becomes at most 20% of an outline diameter of circle. Moreover, said involute curve is made into the form which carried out specified quantity deletion of the neighborhood of the starting point. The involute form reflector plate considered as the composition made to approach until it contacts said radiation source to this reflector plate also with many in the direction for which the main axis and said starting point of a radiation source are connected, Or you may connect two or more involute form reflector plates which carried out specified quantity expansion of the diameter of said radiation source from the circular diameter concerning said involute curve.

[0014] Moreover, it is good also as form which a main axis covers the cylindrical radiation source connected annularly, and leads to a line.

[0015]

[Function] Cover a cylindrical radiation source, it is equipped and, according to this composition, the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry by making one point into the starting point on the outline circle of said radiation source. And it sets to the reflector plate of the form which the straight line which connects a both-sides end **** in said outline circle. Even if said radiation source is a radiation source which does not emit light or infrared radiation equally to the direction of the perimeter from the surface Moreover, like a real plane of reflection, in an opening both-sides end, even if a portion with slightly small radiation intensity exists, the light emitted from said radiation source and radiation are emitted efficiently, and it becomes uniformly possible by an opening to obtain the radial plane of we nature, but the operation is mentioned later.

[0016]

[Working example] With reference to the attached Drawings, this invention is explained in full detail hereafter. What is shown in drawing 1 shows the 1st work example of this invention, and applies the involute form reflector plate concerning this invention to a light. In the figure, it is attached to the device body (not shown) with the socket which the fluorescence tube 5 which is a cylindrical radiation source does not illustrate, and the reflector plate 8 of cross-sectional involute type with which the lower part and the both-sides part of the fluorescence tube 5 were covered, and the upper surface was wide opened in the figure is attached.

[0017] Here, the reflector plate 8 of cross-sectional involute type is x=r (omegacos omega-sin omega) to the x axis and the y-axis which make one on the standard circle 1 of the radius r shown in drawing 1 the starting point O.

y=-r (omegasin omega+cos omega+1)

It comes out and extends in both-sides symmetry in the shape of [of the basis director circle type concerned] an involute curve by making one on the standard circle 1 expressed into the

starting point. However, omega is a variable concerning an involute curve. It is the variable which serves as the starting point in one point K on the standard circle 1, and changes to - pi-pi by substituting omega= 0.

[0018] That is, if omega=pi is substituted, it will become A point of a figure by x=-r and y= 0, and if omega=-pi is substituted, it will become A' point of a figure by x=r and y= 0. Here, as composition concerning this invention, as a reflector plate 8 is shown in drawing 2 in one point K on the standard circle 1, it is the form where only the specified quantity k was deleted, and the reflector plate 8a on the left-hand side of the involute form reflector plate 8 and the right-hand side reflector plate 8b are connected by the plate 15 at M point and N point. Furthermore, if it is in the work example concerned, said specified quantity k has become 10% of diameter phid (=2r) of the standard circle 1.

[0019] Moreover, the fluorescence tube 5 (the central point G) is arranged in the position which moved said standard circle 1 until the fluorescence tube 5 concerned contacted said plate 15 along with the y-axis in the direction which connects said starting point K to the center C of the standard circle 1. Moreover, in this example, diameter phif of a fluorescence tube 5 is expanded 10% to diameter phid of said standard circle 1. Therefore, if it is in this example, a fluorescence tube 5 will also pass through the starting point.

[0020] Furthermore, the involute form reflector plate 8 is made into the form which deleted only the specified quantity s and made E point and E' point the terminal point respectively [said A point and near the A' point]. Furthermore, if it is in the work example concerned, said specified quantity s is determined that the distance v which connects the both-sides end E point after [concerned] doing specified quantity s deletion of, and E' point for said A point and the neighborhood of A' point will turn into 95% which connects the both-sides end before this deletion of distance (2pir).

[0021] Moreover, in the 1st work example, it sets at the both-sides end E point of the reflector plate 8a on the left-hand side of the involute form reflector plate 8, and the right-hand side reflector plate 8b, and E' point. He is trying to establish the plane of reflection of a perpendicular field in a field perpendicular to AOA' which is the effective area of the involute form reflector plate 8 to the AOA' concerned along with the y-axis by turning specular surfaces 11a and 12a respectively at the center side, and arranging plane mirrors 11 and 12. In addition, the length of these plane mirrors 11 and 12 is formed in the length which arrives at a x axis (effective area AOA') from said both-sides end E point and E', and makes B and B' respectively the intersection of the specular surfaces 11a and 12a of these plane mirrors 11 and 12, and a x axis.

[0022] Next, the operation concerning the 1st work example is explained. When a radiation source exists on the standard circle 1, as Tokuganhei2-41706 described, without being interrupted by the surface of the standard circle 1 which is a radiation source, the radiation

bunch emitted from one point R on the standard circle 1 will pass injection effective area AOA' completely, and will be ejected out of a system.

[0023] In 1on fluorescence tube 5 as radial plane in drawing 1 P, although radiant energy is ejected in all the half sphere directions, diameter phif has expanded the fluorescence tube 5 to said standard circle 1, and a position moves and it is arranged. Furthermore, the reflector plate 8 serves as form which only the specified quantity s deleted [said A point and near the A' point]. That is, it will be somewhat shifted from the ideal involute form reflector plate, and has, and a part of radiant energy ejected from 1on fluorescence tube 5 P will face to this fluorescence tube 5, it will have it, and injection efficiency will fall a little.

[0024] However, according to the above composition, as shown in drawing 3 , the relative luminance distribution seen from y axial direction in drawing 1 will become more uniform. That is, if it is in the conventional involute form reflector plate (the drawing 3 middle point line illustrates), a cusp exists in the portion of the starting point, and the heterogeneity of the luminance distribution by the thickness of the cover glass of a fluorescence tube 5 etc. occurs. As the influence shows to drawing 3 , reflector plate aperture position x/pi r is abbreviation 0.3. And abbreviation 0.8 It set and luminance distribution was extremely small (H point in drawing 3 , I point). However, by only the specified quantity's k deleting a reflector plate 8 in one point K on the standard circle 1, arranging in the position which moved the fluorescence tube 5 until it contacted said plate 15, and expanding diameter phif of a fluorescence tube 5 further It was confirmed from the numerical computation result that luminosity is improved sharply (H'point and I' point in drawing 3).

[0025] Moreover, if it is in a real plane of reflection like a metal plating side since a portion with slightly small radiation intensity exists in an opening both-sides end, if it is in a real reflector plate -- an opening both-sides end, i.e., reflector plate aperture position x/pi r, -- abbreviation 1.0 setting -- luminance distribution -- abbreviation 0.5 up to -- it was extremely small (J point in drawing 3). However, only the specified quantity s deletes a reflector plate 8 [said A point and near the A' point]. By deleting the part where the luminance distribution concerned is small, and arranging specular surfaces 11a and 12a in the both-sides end E point of the left-hand side reflector plate 8a and the right-hand side reflector plate 8b, and E' point Since it acted so that another involute form reflector plate 8 might exist succeeding these reflector plates 8a and 8b, what luminosity is sharply improved for (J' point in drawing 3) was confirmed from the numerical computation result.

[0026] In addition, the numerical computation result explained above said specified quantity k as 10% of diameter phid Although the fluorescence tube 5 to which diameter phif was expanded 10% to the standard circle 1 is contacted on said plate 15 and specified quantity s deletion is the result of relating the distance v which connects the both-sides end E point after carrying out, and E' point with the thing it was made to become 95% of ****** By the time it

obtains the result concerned, it calculates about the various specified quantity, and the result concerned has been obtained, and a desirable example of the specified quantity concerned is shown.

[0027] Here, the specified quantity s is taken for an example and the numerical computation result about the various specified quantity is explained. That is, what is shown in drawing 4 - drawing 5 shows the relation between the relative luminance at the time of changing the specified quantity s to various predetermined values, aperture position x/pir, and the accrued angle theta. In order to investigate the directive injection characteristic of the radiant energy in an opening here, the relative radiation intensity which **(ed) directive radiation intensity of the opening with the radiation intensity of this angle in a radial plane is relative luminance, and the angle made with said starting point O to the y-axis is the accrued angle theta. Moreover, in the figure, most this side is equivalent to theta= 0, and is shown at intervals of 12 degrees.

[0028] Drawing 4 illustrates the relative luminance concerning the involute form reflector plate which does not delete at all the both ends which set the specified quantity s to 0. [what / does not delete at all the both ends which set the specified quantity s to 0] if it is alike and is based on drawing 4 In theta= 0 and 12, reflector plate aperture position x/pi r is abbreviation 1.0. And it turns out that relative luminance distribution is extremely small in -1.0, i.e., both ends, and it has become a heterogeneous radial plane in the both ends of a reflector plate.

[0029] On the other hand, the case where said specified quantity s is determined that drawing 5 will become 95% of the distance with which said distance v connects the both-sides end before deletion is shown, and it turns out that the relative luminance distribution in both ends is improved. At this time, the injection efficiency eta (= radiant energy ejected from the radiant energy / cylinder radial plane ejected from an opening) is 91% (in the case of drawing 4 , it is eta= 94%).

[0030] Moreover, the case where said specified quantity s is determined that said distance v will turn into 83% which connects the both-sides end before deletion of distance is shown in drawing 6 , and it turns out that relative luminance distribution is improved sharply. However, the injection efficiency eta is decreasing to 80%. Therefore, it turns out that it is more desirable than a numerical computation result that it is the quantity from which the distance with which the specified quantity s concerning deletion near [said] the both-sides end connects the both-sides end after [concerned] carrying out specified quantity deletion for the neighborhood of a both-sides end turns into at least 80% which connects the both-sides end before this deletion of distance.

[0031] As it has and being explained above, by adding improvement to the portion near the starting point K of the involute form reflector plate 8, the opening both-sides end A, and the portion near A', the light emitted from the fluorescence tube 5 which is said radiation source is emitted efficiently, and it becomes uniformly possible by opening BOB' to obtain the radial

plane of we nature. Moreover, since the reflector plate 8 serves as the form where only the specified quantity k was deleted, in one point K on the standard circle 1, a cusp does not exist in the tip portion of the portion of the starting point concerned, but processing manufacture of a reflector plate 8 becomes easy, and leads to reduction of manufacture cost. Moreover, in the 1st work example, since the left-hand side reflector plate 8a and the right-hand side reflector plate 8b were connected by the plate 15, it becomes strong in intensity and it becomes possible to secure the intensity of the involute reflector plate 8.

[0032] Moreover, as the 2nd work example of this invention, as shown in drawing 7 , some which carried out connection arrangement are in three-piece parallel about the above-mentioned involute form reflector plate to the fluorescence tubes 35, 45, and 55 which are cylindrical radiation sources. That is, the involute form reflector plate 31 is constituted by the left-hand side reflector plate 31a and the right-hand side reflector plate 31b, and the involute form reflector plates 41 and 51 are similarly constituted by 41a, 41b, and 51a and 51b. Here, outline composition of each involute form reflector plates 31, 41, and 51 is carried out by the involute form reflector plate 8 shown as the 1st work example of this invention. However, the reflector plate 31b and the reflector plate 41a are connected by the terminal area 61, and the reflector plate 41b and the reflector plate 51a are connected by the terminal area 62. Moreover, in the both-sides ends 32 and 52 of a reflector plate 31a and a reflector plate 51b, specular surfaces 67a and 68a are respectively turned to the center side, and plane mirrors 67 and 68 are arranged in a field perpendicular to the effective area 65 of the involute form reflector plates 31, 41, and 51. In addition, the length of these plane mirrors 67 and 68 is formed in the length which reaches an effective area 65 from said both-sides ends 32 and 52, and sets respectively the intersection of the specular surfaces 11a and 12a of these plane mirrors 67 and 68, and an effective area 65 to 33 and 53.

[0033] If it is in each involute form reflector plates 31, 41, and 51 even if it is in the 2nd work example, luminosity is sharply improved by only said specified quantity's k deleting each reflector plate, arranging in the position which moved fluorescence tubes 35, 45, and 55, and expanding the diameter of fluorescence tubes 35, 45, and 55 further. Moreover, [influence] since the influence of the portion with slightly small radiation intensity in an opening both-sides end has also connected each involute form reflector plates 31, 41, and 51 by the terminal area 61 and the terminal area 62 Luminosity is sharply improved by being able to delete the part where the luminance distribution concerned is small, and arranging plane mirrors 67 and 68 in the both-sides ends 32 and 52.

[0034] Furthermore, also in the 2nd work example, a cusp does not exist in the tip portion of the portion of said starting point, but processing manufacture of each involute form reflector plates 31, 41, and 51 becomes easy, and leads to reduction of manufacture cost. Moreover, [with especially the 2nd work example] although it is clear Since a light with high injection

efficiency can be constituted from composition which made low overall height L which set the involute form reflector plates 31, 41, and 51 and fluorescence tubes 35, 45, and 55 as compared with the conventional reflector plate, it becomes advantageous when embedding on the ceiling, for example.

[0035] Moreover, it sets to the reflector plate with which covers a cylindrical heat source instead of a fluorescence tube 5 or fluorescence tubes 35, 45, and 55, and it is equipped in the work example explained above and which reflects the radiation from a heat source. The form of the reflector plate section which intersects perpendicularly with the main axis of said heat source is the same to said central axial direction. It extends in the shape of [concerned / circular] an involute curve in both-sides symmetry by making one point of the shape of an outline circle of a heat source section into the starting point. And even if the straight line which connects a both-sides end considers it as the form which **** in said outline circle and adds improvement to the portion near the starting point of an involute form reflector plate, and the portion near the opening both-sides end further, while doing so the same operation effect as the above-mentioned, it becomes possible to warm an object homogeneously.

[0036] In the work example explained above, the cylindrical radiation source of a fluorescence tube 5, fluorescence tubes 35 and 45, and 55 grades has the form connected annularly, and a main axis Moreover, the involute form reflector plate 8 Or even if the starting point of the section of 31, 41, and 51 considers it as the form located near [concerned] the point of contact in the plane including the main axis of a radiation source, and the plane which touches this radiation source at parallel, the same operation effect as the above-mentioned will be done so.

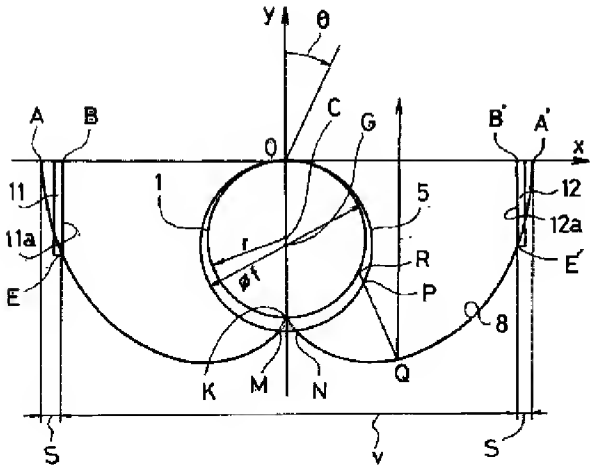
[0037]

[Effect of the Invention] As explained above, according to this invention, cover a cylindrical radiation source and it is equipped. In the reflector plate of the form which the straight line which the reflector plate section which intersects perpendicularly with the main axis of the radiation source of the shape of this cylinder makes one point the starting point on the outline circle of said radiation source, and is prolonged in the shape of [concerned / circular] an involute curve in both-sides symmetry, and connects a both-sides end **** in said outline circle Only the specified quantity k deletes an involute form reflector plate [near the starting point], and a radiation source is moved until it also contacts many at this involute form reflector plate. Furthermore, by expanding the diameter of a radiation source and carrying out specified quantity deletion of the neighborhood of a both-sides end of an involute form reflector plate Even if said radiation source is a radiation source which does not emit light or infrared radiation equally to the direction of the perimeter from the surface Moreover, in an opening both-sides end like a real plane of reflection even if a portion with slightly small radiation intensity exists While emitting efficiently the light emitted from said radiation source, and radiation and

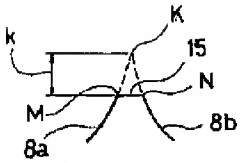
becoming uniformly possible by an opening to obtain the radial plane of we nature, processing manufacture of an involute form reflector plate becomes easy, and it is effective in the ability to aim at reduction of manufacture cost.

[Brief Description of the Drawings]
[Drawing 1] The outline sectional view of the involute form reflector plate in which the 1st work example of this invention is shown
[Drawing 2] The K section elements on larger scale in drawing 1
[Drawing 3] The relative luminance distribution map explaining the operation effect concerning a work example same as the above
[Drawing 4] The relative luminance distribution map explaining the operation effect concerning a work example same as the above
[Drawing 5] The relative luminance distribution map explaining the operation effect concerning a work example same as the above
[Drawing 6] The relative luminance distribution map explaining the operation effect concerning a work example same as the above
[Drawing 7] The outline sectional view of the involute form reflector plate in which the 2nd work example of this invention is shown
[Explanations of letters or numerals]
5 Fluorescence Tube
8 Involute Form Reflector Plate
11 Plane Mirror
12 Plane Mirror
31 Involute Form Reflector Plate
35 Fluorescence Tube
41 Involute Form Reflector Plate
45 Fluorescence Tube
51 Involute Form Reflector Plate
55 Fluorescence Tube

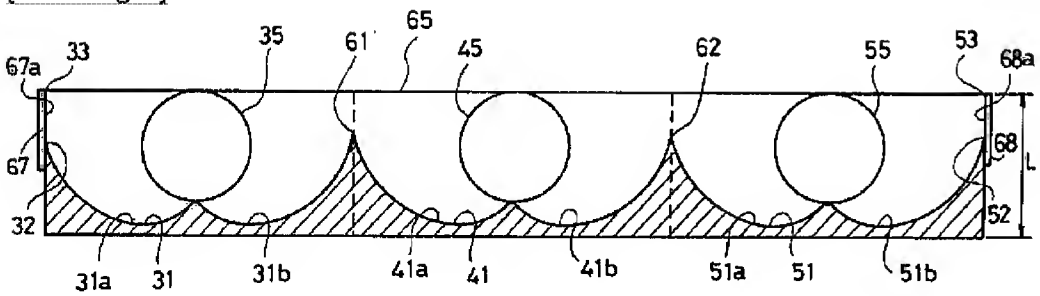
[Drawing 1]



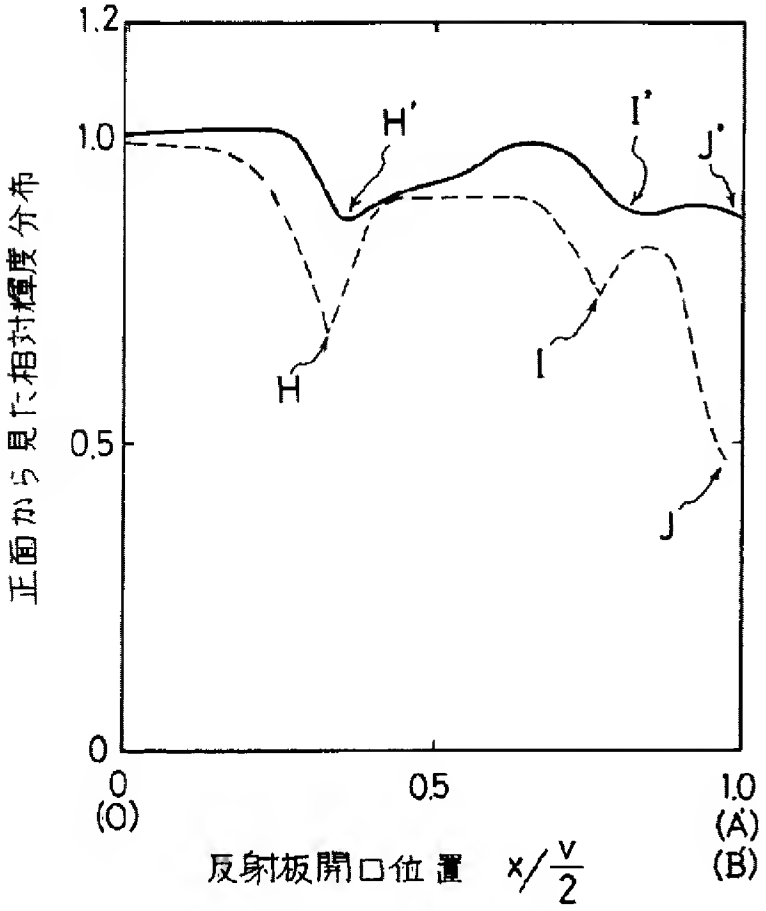
[Drawing 2]



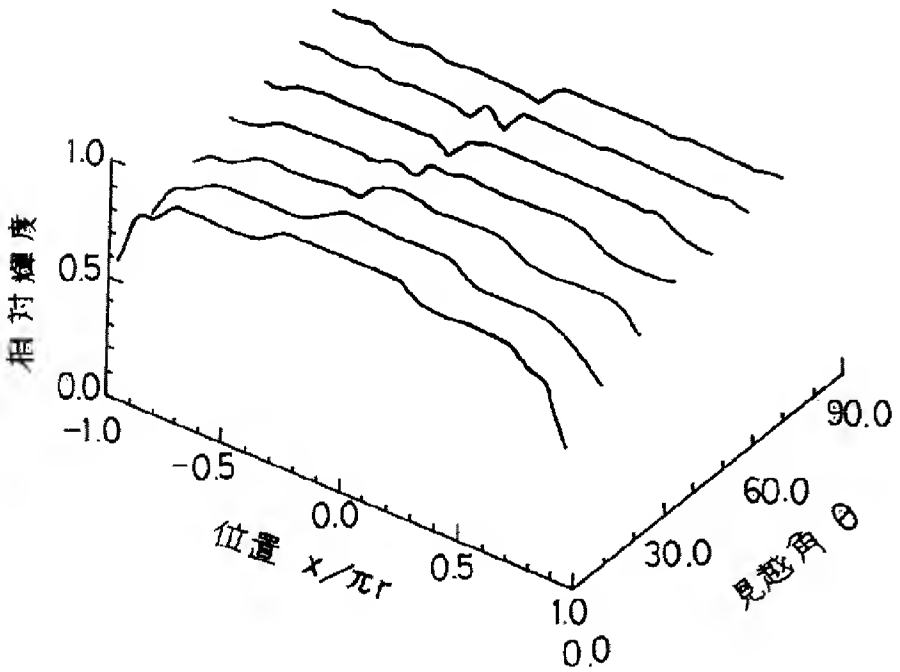
[Drawing 7]



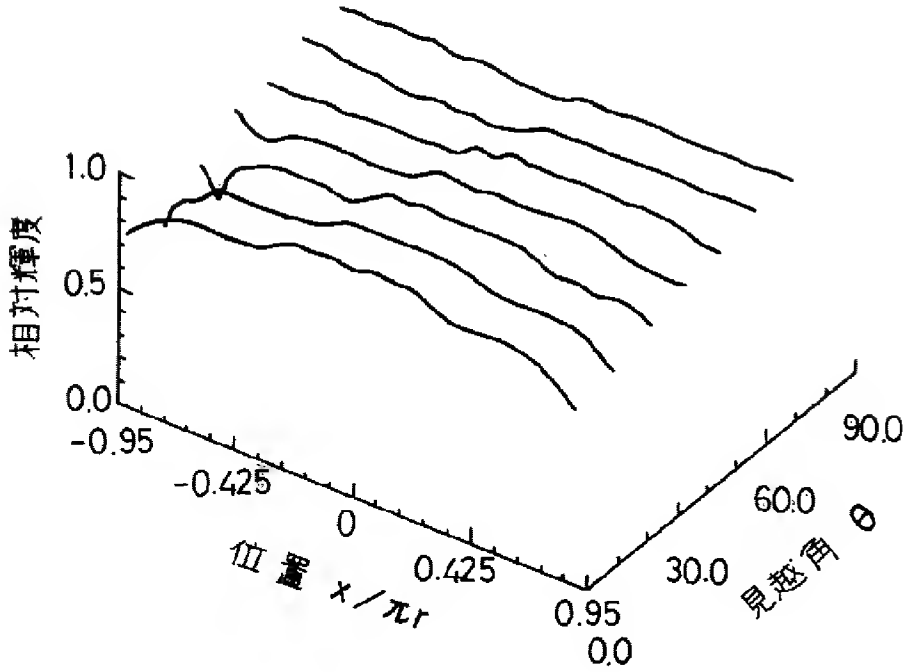
[Drawing 3]



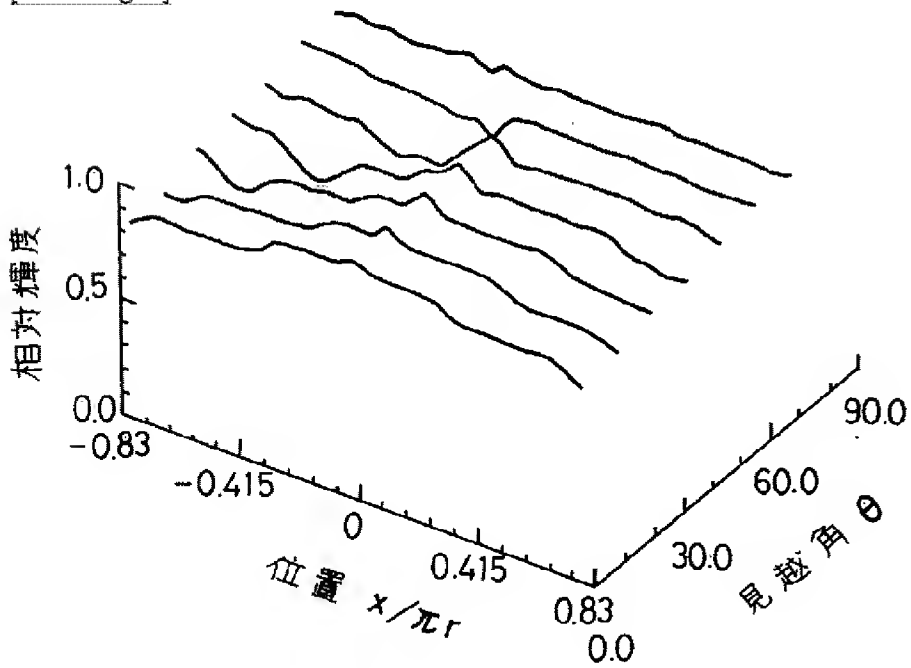
[Drawing 4]



[Drawing 5]



[Drawing 6]



[Translation done.]